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PORTABLE SCANNER FOR ENABLING AUTOMATIC COMMERCE TRANSACTIONS

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PORTABLE SCANNER FOR ENABLING AUTOMATIC COMMERCE TRANSACTIONS

TECHNICAL FIELD OF THE INVENTION

This invention is related to a portable scanner used for automating purchasing transactions of one or more articles of commerce. More particularly, the user scans the article which facilitates retrieval of product and credit information from over a communication network to complete the purchase of the article of commerce.

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a Continuation-in-Part of pending U.S. Patent Application Serial No. 09/378,221 (Atty Dkt. No. PHLY-24,669) entitled "METHOD AND APPARATUS FOR ACCESSING A REMOTE LOCATION BY SCANNING AN OPTICAL CODE" filed on August 19, 1999, which is a Continuation-in-Part of the following two pending U.S. Patent Applications: Serial No. 09/151,471 (Atty. Dkt. No. PHLY-24,397) entitled "METHOD FOR INTERFACING SCANNED

PRODUCT INFORMATION WITH A SOURCE FOR THE PRODUCT OVER A GLOBAL NETWORK," and Serial No. 09/151,530 (Atty. Dkt. No. PHLY-24,398) entitled "METHOD FOR CONTROLLING A COMPUTER WITH AN AUDIO SIGNAL," both filed on September 11, 1998.

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BACKGROUND OF THE INVENTION

With the growing numbers of computer users connecting to the "Internet," many companies are seeking the substantial commercial opportunities presented by such a large user base. For example, one technology which exists allows a television ("TV") signal to trigger a computer response in which the consumer will be guided to a personalized web page. The source of the triggering signal may be a TV, video tape recorder, or radio. For example, if a viewer is watching a TV program in which an advertiser offers viewer voting, the advertiser may transmit a unique signal within the television signal which controls a program known as a "browser" on the viewer's computer to automatically display the advertiser's web page. The viewer then simply makes a selection which is then transmitted back to the advertiser.

In order to provide the viewer with the capability of responding to a wide variety of companies using this technology, a database of company information and Uniform Resource Locator ("URL") codes is necessarily maintained in the viewer's computer, requiring continuous updates. URLs are short strings of data that identify resources on the Internet: documents, images, downloadable files, services, electronic mailboxes, and other resources. URLs make resources available under a variety of naming schemes and access methods such as HTTP, FTP, and Internet mail, addressable in the same simple way. URLs reduce the tedium of "login to this server, then issue this magic command..." down to a single click. The Internet uses URLs to specify the location of files on other servers. A URL includes the type of resource being accessed (e.g., Web, gopher, FTP), the address of the server, and the location of the file. The URL can point to any file on any networked computer. Current technology requires the viewer to perform periodic updates to obtain the most current URL database. This aspect of the current technology is cumbersome since the update process requires downloading information to the viewer's computer. Moreover, the likelihood for error in performing the update, and the necessity of

redoing the update in the event of a later computer crash, further complicates the process. Additionally, current technologies are limited in the number of companies which may be stored in the database. This is a significant limitation since world-wide access presented by the Internet and the increasing number of companies connecting to perform on-line E-commerce necessitates a large database.

SUMMARY OF THE INVENTION

The present invention disclosed and claimed herein, in one aspect thereof, comprises a method for initiating and completing a commercial transaction to acquire an article of commerce. The article of commerce has associated therewith a machine resolvable code (MRC). The MRC has encoded therein information relating to the article of commerce. The encoded information in the MRC is extracted therefrom and unique identification information associated with a user is obtained. The encoded information from the MRC is stored in a temporary buffer. After the encoded information from the MRC is stored and the unique identification information associated with a user is obtained, it is transferred to a retail processing system. In response to the retail processing system receiving the encoded information from the MRC and the transferred unique identification of the user, ownership of the article of commerce is transferred to the user.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and the advantages thereof, reference is now made to the following description taken in conjunction with the accompanying Drawings in which:

FIGURE 1 illustrates a block diagram of the preferred embodiment;

FIGURE 2 illustrates the computer components employed in this embodiment;

FIGURE 3 illustrates system interactions over a global network;

FIGURES 4a-4e illustrate the various message packets transmitted between the source PC and network servers used in the preferred embodiment; ~~and~~

FIGURE 5 is a flowchart depicting operation of the system according to the preferred embodiment;

FIGURE 6 illustrates a flowchart of actions taken by the Advertiser Reference Server ("ARS") server;

FIGURE 7 illustrates a flowchart of the interactive process between the source computer and ARS;

FIGURE 8 illustrates a web browser page receiving the modified URL/advertiser product data according to the preferred embodiment;

FIGURE 9 illustrates a simplified block diagram of the disclosed embodiment;

FIGURE 10 illustrates a more detailed, simplified block diagram of the embodiment of FIGURE 9;

FIGURE 11 illustrates a diagrammatic view of a method for performing the routing operation;

FIGURE 12 illustrates a block diagram of an alternate embodiment utilizing an optical region in the video image for generating the routing information;

FIGURE 13 illustrates a block diagram illustrating the generation of a profile with the disclosed embodiment;

FIGURE 14 illustrates a flowchart for generating the profile and storing at the ARS;

FIGURE 15 illustrates a flowchart for processing the profile information when information is routed to a user;

FIGURE 16 illustrates a general block diagram of a disclosed embodiment;

FIGURE 17 illustrates the conversion circuit of the wedge interface;

FIGURE 18 illustrates a sample message packet transmitted from the user PC to the ARS;

FIGURE 19 illustrates a more detailed block diagram of the routing of the message packets between the various nodes;

FIGURE 20 illustrates a block diagram of a browser window, according to a disclosed embodiment;

FIGURE 21 illustrates a diagrammatic view of information contained in the ARS database;

FIGURE 22 illustrates a flowchart of the process of receiving information for the user's perspective;

FIGURE 23 illustrates a flowchart according to the ARS;

FIGURE 24 illustrates a flowchart of the process performed at the E-commerce node;

FIGURE 25 illustrates one embodiment of the disclosed automatic commerce transaction architecture;

FIGURE 26 illustrates a disclosed embodiment having a local database which stores the vendor and credit card company network addresses;

FIGURE 27 illustrates a flowchart of the process of a disclosed embodiment;

FIGURE 28 illustrates a more detailed flowchart of the transaction process from the perspective of the POS;

FIGURE 29 illustrates a detailed flowchart of the purchasing process of a disclosed embodiment;

FIGURE 30 illustrates a detailed block diagram of the portable scanner in operation with the PC/POS;

FIGURE 31 illustrates a physical diagram of the portable scanner; and

FIGURE 32 illustrates a database structure used in accordance with a disclosed embodiment.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to FIGURE 1, there is illustrated a block diagram of a system for controlling a personal computer ("PC") 112 via an audio tone transmitted over a wireless system utilizing a TV. In the embodiment illustrated in FIGURE 1, there is provided a transmission station 101 and a receive station 117 that are connected via a communication link 108. The transmission station 101 is comprised of a television program source 104, which is operable to generate a program in the form of a broadcast signal comprised of video and audio. This is transmitted via conventional techniques along channels in the appropriate frequencies. The program source is input to a mixing device 106, which mixing device is operable to mix in an audio signal. This audio signal is derived from an audio source 100 which comprises a coded audio signal which is then modulated onto a carrier which is combined with the television program source 104. This signal combining can be done at the audio level, or it can even be done at the RF level in the form of a different carrier. However, the preferred method is to merely sum the audio signal from the modulator 102 into the audio channel of the program that is generated by the television program source 104. The output thereof is provided from the mixing device 106 in the form of broadcast signal to an antenna 107, which transmits the information over the communication link 108 to an antenna 109 on the receive side.

On the receive side of the system, a conventional receiver 110, such as a television is provided. This television provides a speaker output which provides the user with an audible signal. This is typically associated with the program. However, the receiver 110 in the disclosed embodiment, also provides an audio output jack, this being the type RCA jack. This jack is utilized to provide an audio output signal on a line 113 which is represented by an audio signal 111. This line 113 provides all of the audio that is received over the communication link 108 to the PC 112 in the audio input port on the PC 112. However, it should be understood that, although a

direct connection is illustrated from the receiver 110 to the PC 112, there actually could be a microphone pickup at the PC 112 which could pick the audio signal up. In the disclosed embodiment, the audio signal generated by the advertiser data input device 100 is audible to the human ear and, therefore, can be heard by the user. Therefore, no special filters are needed to provide this audio to the PC 112.

The PC 112 is operable to run programs thereon which typically are stored in a program file area 116. These programs can be any type of programs such as word processing programs, application programs, etc. In the disclosed embodiment, the program that is utilized in the system is what is referred to as a "browser." The PC 112 runs a browser program to facilitate the access of information on the network, for example, a global communication network known as the "Internet" or the World-Wide-Web ("Web"). The browser is a hypertext-linked application used for accessing information. Hypertext is a term used to describe a particular organization of information within a data processing system, and its presentation to a user. It exploits the computer's ability to link together information from a wide variety of sources to provide the user with the ability to explore a particular topic. The traditional style of presentation used in books employs an organization of the information which is imposed upon it by limitations of the medium, namely fixed sized, sequential paper pages. Hypertext systems, however, use a large number of units of text or other types of data such as image information, graphical information, video information, or sound information, which can vary in size. A collection of such units of information is termed a hypertext document, or where the hypertext documents employ information other than text, hypermedia documents. Multimedia communications may use the Hypertext Transfer Protocol ("HTTP"), and files or formatted data may use the Hypertext Markup Language ("HTML"). This formatting language provides for a mingling of text, graphics, sound, video, and hypertext links by "tagging" a text document using HTML. Data encoded using HTML is often referred to as an "HTML document," an "HTML page," or a "home

page." These documents and other Internet resources may be accessed across the network by means of a network addressing scheme which uses a locator referred to as a Uniform Resource Locator ("URL"), for example, "http://www.digital.com."

The Internet is one of the most utilized networks for interconnecting distributed computer systems and allows users of these computer systems to exchange data all over the world. Connected to the Internet are many private networks, for example, corporate or commercial networks. Standard protocols, such as the Transport Control Protocol ("TCP") and the Internet Protocol ("IP") provide a convenient method for communicating across these diverse networks. These protocols dictate how data are formatted and communicated. As a characteristic of the Internet, the protocols are layered in an IP stack. At higher levels of the IP stack, such as the application layer (where HTTP is employed), the user information is more readily visible, while at lower levels, such as the network level (where TCP/IP are used), the data can merely be observed as packets or a stream of rapidly moving digital signals. Superimposed on the Internet is a standard protocol interface for accessing Web resources, such as servers, files, Web pages, mail messages, and the like. One way that Web resources can be accessed is by browsers made by *Netscape*® and *Microsoft Internet Explorer*®.

Referring again now to FIGURE 1, the user can load this program with the appropriate keystrokes such that a browser window will be displayed on a display 118. In one embodiment, the user can run the browser program on the PC 112 such that the browser window is displayed on the display 118. While watching a preferred program, the user can also view display 118. When an audio signal is received by the receiver 110 and the encoded information is contained therein that was input thereto by the advertiser, the PC 112 will then perform a number of operations. The first operation, according to the disclosed embodiment, is to extract the audio information within the received audio signal in the form of digital data, and then

transmit this digital data to a defined location on the global communication network via a modem connection 114. This connection will be described hereinbelow. This information will be relayed to a proprietary location and the instructions sent back to the PC 112 as to the location of the advertiser associated with the code, and the PC 112 will then effect a communication link to that location such that the user can view on the display 118 information that the advertiser, by the fact of putting the tone onto the broadcast channel, desires the viewer to view. This information can be in the form of interactive programs, data files, etc. In one example, when an advertisement appears on the television, the tone can be generated and then additional data displayed on the display 118. Additionally, a streaming video program could be played on the PC received over the network, which streaming video program is actually longer than the advertising segment on the broadcast. Another example would be a sports game that would broadcast the tone in order to allow a user access to information that is not available over the broadcast network, such as additional statistics associated with the sports program, etc.

By utilizing the system described herein with respect to the disclosed embodiment of FIGURE 1, an advertiser is allowed the ability to control a user's PC 112 through the use of tones embedded within a program audio signal. As will described hereinbelow, the disclosed embodiment utilizes particular routing information stored in the PC 112 which allows the encoded information in the received audio signal to route this information to a desired location on the network, and then allow other routing information to be returned to the PC 112 for control thereof to route the PC 112 to the appropriate location associated with that code.

Referring now to FIGURE 2, there is illustrated a computer 204, similar to computer 112, connected to display information on display 118. The computer 204 comprises an internal audio or "sound" card 206 for receiving the transmitted audio signal through receive antenna 109 and receiver 110. The sound card 206 typically

contains analog-to-digital circuitry for converting the analog audio signal into a digital signal. The digital signal may then be more easily manipulated by software programs. The receiver 110 separates the audio signal from the video signal. A special trigger signal located within the transmitted advertiser audio signal triggers proprietary software running on the computer 204 which launches a communication application, in this particular embodiment, the web browser application located on the PC 204. Coded advertiser information contained within the audio signal is then extracted and appended with the address of a proprietary server located on the communication network. The remote server address is in the form of a URL.

This appended data, in addition to other control codes, is inserted directly into the web browser application for automatic routing to the communication network. The web browser running on PC 204, and communicating to the network with an internal modem 208, in this embodiment, transmits the advertiser information to the remote server. The remote server cross-references the advertiser product information to the address of the advertiser server located on the network. The address of the advertiser server is routed back through the PC 204 web browser to the advertiser server. The advertiser product information is returned to PC 204 to be presented to the viewer on display 118. In this particular embodiment, the particular advertiser product information displayed is contained within the advertiser's web page 212. As mentioned above, the audio signal is audible to the human ear. Therefore the audio signal, as emitted from the TV speakers, may be input to the sound card 206 via a microphone. Furthermore, the audio signal need not be a real-time broadcast, but may be on video tapes, CDs, DVD, or other media which may be displayed at a later date. With the imminent implementation of high definition digital television, the audio signal output from the TV may also be digital. Therefore, direct input into a sound card for A/D purposes may not be necessary, but alternative interfacing techniques to accommodate digital-to-digital signal formats would apply.

Referring now to FIGURE 3, there is illustrated a source PC 302, similar to PCs 204 and 112, connected to a global communication network (GCN) 306 through an interface 304. In this embodiment, the audio signal 111 is received by PC 302 through its sound card 206. The audio signal 111 comprises a trigger signal which triggers proprietary software into launching a web browser application residing on the PC 302. The audio signal 111 also comprises advertiser product information which is extracted and appended with URL information of an Advertiser Reference Server ("ARS") 308. The ARS 308 is a system disposed on the network 306 that is defined as the location to which data in the audio signal 111 is to be routed. As such, data in the audio signal 111 will always be routed to the ARS 308, since a URL is unique on the GCN 306. Connected to the ARS 308 is a database 310 of product codes and associated manufacturer URLs. The database 310 undergoes a continual update process which is transparent to the user. As companies sign-on, i.e., subscribe to this technology, manufacturer and product information are added to the database 310 without interrupting operation of the source PC 302 with frequent updates. When the advertiser server address URL is obtained from the ARS database 310, it and the request for the particular advertiser product information is automatically routed back through the web browser on PC 302, over to the respective advertiser server for retrieval of the advertiser product information to the PC 302. Additionally, although the disclosed invention discusses a global communication network, the system is also applicable to LANs, WANs, and peer-to-peer network configurations. It should be noted that the disclosed architecture is not limited to a single source PC 302, but may comprise a plurality of source PCs, e.g., PC 300 and PC 303. Moreover, a plurality of ARS 308 systems and advertiser servers 312 may be implemented, e.g., ARS 314, and advertiser server A 316, respectively.

The information transactions, in general, which occur between the networked systems of this embodiment, over the communication network, are the following. The web browser running on source PC 302 transmits a message packet to the ARS

308 over Path "A." The ARS 308 decodes the message packet and performs a cross-reference function with product information extracted from the received message packet to obtain the address of an advertiser server 312. A new message packet is assembled comprising the advertiser server 312 address, and sent back to the source PC 302 over Path "B." A "handoff" operation is performed whereby the source PC 302 browser simply reroutes the information on to the advertiser server 312 over Path "C," with the appropriate source and destination address appended. The advertiser server 312 receives and decodes the message packet. The request-for-advertiser-product-information is extracted and the advertiser 312 retrieves the requested information from its database for transmission back to the source PC 302 over Path "D." The source PC 302 then processes the information, i.e., for display to the viewer. The optional Path "E" is discussed hereinbelow. It should be noted that the disclosed methods are not limited to only browser communication applications, but may accommodate, with sufficient modifications by one skilled in the art, other communication applications used to transmit information over the Internet or communication network.

Referring now to FIGURE 4a, the message packet 400 sent from the source PC 302 to ARS 308 via Path "A" comprises several fields. One field comprises the URL of the ARS 308 which indicates where the message packet is to be sent. Another field comprises the advertiser product code or other information derived from the audio signal 111, and any additional overhead information required for a given transaction. The product code provides a link to the address of the advertiser server 312, located in the database 310. Yet another field comprises the network address of the source PC 302. In general, network transmissions are effected in packets of information, each packet providing a destination address, a source address, and data. These packets vary depending upon the network transmission protocol utilized for communication. Although the protocols utilized in the disclosed embodiment are of a conventional protocol suite commonly known as TCP/IP, it

should be understood that any protocols providing the similar basic functions can be used, with the primary requirement that a browser can forward the routing information to the desired URL in response to keystrokes being input to a PC. Within the context of this disclosure, "message packet" shall refer to and comprise the destination URL, product information, and source address, even though more than a single packet must be transmitted to effect such a transmission.

Upon receipt of the message packet 400 from source PC 302, ARS 308 processes the information in accordance with instructions embedded in the overhead information. The ARS 308 specifically will extract the product code information from the received packet 400 and, once extracted, will then decode this product code information. Once decoded, this information is then compared with data contained within the ARS advertiser database 310 to determine if there is a "hit." If there is no "hit" indicating a match, then information is returned to the browser indicating such. If there is a "hit," a packet 402 is assembled which comprises the address of the source PC 302, and information instructing the source PC 302 as to how to access, directly in a "handoff" operation, another location on the network, that of an advertiser server 312. This type of construction is relatively conventional with browsers such as *Netscape*® and *Microsoft Internet Explorer*® and, rather than displaying information from the ARS 308, the source PC 302 can then access the advertiser server 312. The ARS 308 transmits the packet 402 back to source PC 302 over Path "B." Referring now to FIGURE 4b, the message packet 402 comprises the address of the source PC 302, the URL of the advertiser server 312 embedded within instructional code, and the URL of the ARS 308.

Upon receipt of the message packet 402 by the source PC 302, the message packet 402 is disassembled to obtain pertinent routing information for assembly of a new message packet 404. The web browser running on source PC 302 is now directed to obtain, over Path "C," the product information relevant to the particular

advertiser server 312 location information embedded in message packet 404. Referring now to FIGURE 4c, the message packet 404 for this transaction comprises the URL of the advertiser server 312, the request-for-product-information data, and the address of the source PC 302.

Upon receipt of the message packet 404 from source PC 302, advertiser server 312 disassembles the message packet 404 to obtain the request-for-product-information data. The advertiser server 312 then retrieves the particular product information from its database, and transmits it over Path "D" back to the source PC 302. Referring now to FIGURE 4d, the message packet 406 for this particular transaction comprises the address of the source PC 302, the requested information, and the URL of the advertiser server 312.

Optionally, the ARS 308 may make a direct request for product information over Path "E" to advertiser server 312. In this mode, the ARS 308 sends information to the advertiser server 312 instructing it to contact the source PC 302. This, however, is unconventional and requires more complex software control. The message packet 408 for this transaction is illustrated in FIGURE 4e, which comprises the URL of the advertiser server 312, the request-for-product-information data, and the address of the source PC 302. Since product information is not being returned to the ARS 308, but directly to the source PC 302, the message packet 408 requires the return address to be that of the source PC 302. The product information is then passed directly to PC 302 over Path "D."

Referring now to FIGURE 5, the method for detecting and obtaining product information is as follows. In decision block 500, a proprietary application running resident on a source computer PC 302 (similar to PC 204) monitors the audio input for a special trigger signal. Upon detection of the trigger signal, data following the trigger signal is decoded for further processing, in function block 502. In function

block 504, the data is buffered for further manipulation. In decision block 506, a determination is made as to whether the data can be properly authenticated. If not, program flow continues through the "N" signal to function block 520 where the data is discarded. In function block 522, the program then signals for a retransmission of the data. The system then waits for the next trigger signal, in decision block 500. If properly authenticated in decision block 506, program flow continues through the "Y" signal path where the data is then used to launch the web browser application, as indicated in function block 508. In function block 510, the web browser receives the URL data, which is then automatically routed through the computer modem 208 to the network interface 304 and ultimately to the network 306. In function block 514, the ARS 308 responds by returning the URL of advertiser server 312 to the PC 302. In function block 516, the web browser running on the source PC 302, receives the advertiser URL information from the ARS 308, and transmits the URL for the product file to the advertiser server 312. In block 518, the advertiser server 312 responds by sending the product information to the source PC 302 for processing. The user may obtain the benefits of this architecture by simply downloading the proprietary software over the network. Other methods for obtaining the software are well-known; for example, by CD, diskette, or pre-loaded hard drives.

Referring now to FIGURE 6, there is illustrated a flowchart of the process the ARS 308 may undergo when receiving the message packet 400 from the source PC 302. In decision block 600, the ARS 308 checks for the receipt of the message packet 400. If a message packet 400 is not received, program flow moves along the "N" path to continue waiting for the message. If the message packet 400 is received, program flow continues along path "Y" for message processing. Upon receipt of the message packet 400, in function block 602, the ARS 308 decodes the message packet 400. The product code is then extracted independently in function block 604 in preparation for matching the product code with the appropriate advertiser server address located in the database 310. In function block 606, the product code is then

used with a lookup table to retrieve the advertiser server 312 URL of the respective product information contained in the audio signal data. In function block 608, the ARS 308 then assembles message packet 402 for transmission back to the source PC 302. Function block 610 indicates the process of sending the message packet 402 back to the source PC 302 over Path "B."

Referring now to FIGURE 7, there is illustrated a flowchart of the interactive processes between the source PC 302 and the advertiser server 312. In function block 700, the source PC 302 receives the message packet 402 back from the ARS 308 and begins to decode the packet 402. In function block 702, the URL of the advertiser product information is extracted from the message packet 402 and saved for insertion into the message packet 404 to the advertiser server 312. The message packet 404 is then assembled and sent by the source PC 302 over Path "C" to the advertiser server 312, in function block 704. While the source PC 302 waits, in function block 706, the advertiser server 312 receives the message packet 404 from the source PC 302, in function block 708, and disassembles it. The product information location is then extracted from the message packet 404 in function block 710. The particular product information is retrieved from the advertiser server 312 database for transmission back to the source PC 302. In function block 712, the product information is assembled into message packet 406 and then transmitted back to the source PC 302 over Path "D." Returning to the source PC 302 in function block 714, the advertiser product information contained in the message packet 406 received from the advertiser server 312, is then extracted and processed in function block 716.

Referring now to FIGURE 8, after receipt of a trigger signal, a web browser application on a source PC 302 is automatically launched and computer display 800 presents a browser page 802. Proprietary software running on the source PC 302 processes the audio signal data after being digitized through the sound card 206. The

software appropriately prepares the data for insertion directly into the web browser by extracting the product information code and appending keystroke data to this information. First, a URL page 804 is opened in response to a Ctrl-O command added by the proprietary software as the first character string. Opening URL page 804 automatically positions the cursor in a field 806 where additional keystroke data following the Ctrl-O command will be inserted. After URL page 804 is opened, the hypertext protocol preamble http:// is inserted into the field 806. Next, URL information associated with the location of the ARS 308 is inserted into field 806. Following the ARS 308 URL data are the characters /? to allow entry of variables immediately following the /? characters. In this embodiment, the variable following is the product information code received in the audio signal. The product code information also provides the cross-reference information for obtaining the advertiser URL from the ARS database 310. Next, a carriage return is added to send the URL/product data and close the window 804. After the message packet 400 is transmitted to the ARS 308 from the source PC 302, transactions from the ARS308, to the source PC 302, to the advertiser server 312, and back to the source PC 302, occur quickly and are transparent to the viewer. At this point, the next information the viewer sees is the product information which was received from the advertiser server 312.

Referring now to FIGURE 9, there is illustrated a block diagram of a more simplified embodiment. In this embodiment, a video source 902 is provided which is operable to provide an audio output on an audio cable 901 which provides routing information referred to by reference numeral 904. The routing information 904 is basically information contained within the audio signal. This is an encoded or embedded signal. The important aspect of the routing information 904 is that it is automatically output in realtime as a function of the broadcast of the video program received over the video source 902. Therefore, whenever the program is being broadcast in realtime to the user 908, the routing information 904 will be output

whenever the producer of the video desires it to be produced. It should be understood that the box 902 representing the video source could be any type of media that will result in the routing information being output. This could be a cassette player, a DVD player, an audio cassette, a CD ROM or any such media. It is only important that this is a program that the producer develops which the user 908 watches in a continuous or a streaming manner. Embedded within that program, at a desired point selected by the producer, the routing information 904 is output.

The audio information is then routed to a PC 906, which is similar to the PC 112 in FIGURE 1. A user 908 is interfaced with the PC to receive information thereof, the PC 906 having associated therewith a display (not shown). The PC 906 is interfaced with a network 910, similar to the network 306 in FIGURE 3. This network 910 has multiple nodes thereon, one of which is the PC 906, and another of which is represented by a network node 912 which represents remote information. The object of the present embodiment is to access remote information for display to the user 908 by the act of transmitting from the video program in block 902 the routing information 904. This routing information 904 is utilized to allow the PC 906 which has a network "browser" running thereon to "fetch" the remote information at the node 912 over the network 910 for display to the user 908. This routing information 904 is in the form of an embedded code within the audio signal, as was described hereinabove.

Referring now to FIGURE 10, there is illustrated a more detailed block diagram of the embodiment of FIGURE 9. In this embodiment, the PC 906 is split up into a couple of nodes, a first PC 1002 and a second PC 1004. The PC 1002 resides at the node associated with the user 908, and the PC 1004 resides at another node. The PC 1004 represents the ARS 308 of FIGURE 3. The PC 1004 has a database 1006 associated therewith, which is basically the advertiser database 310. Therefore, there are three nodes on the network 910 necessary to implement the

disclosed embodiment, the PC 1002, the PC 1004 and the remote information node 912. The routing information 904 is utilized by the PC 1002 for routing to the PC 1004 to determine the location of the remote information node 912 on the network 910. This is returned to the PC 1002 and a connection made directly with the remote information node 912 and the information retrieved therefrom to the user 908. The routing information 904 basically constitutes primary routing information.

Referring now to FIGURE 11, there is illustrated a diagrammatic view of how the network packet is formed for sending the primary routing information to the PC 1004. In general, the primary routing information occupies a single field which primary routing information is then assembled into a data packet with the secondary routing information for transfer to the network 910. This is described hereinabove in detail.

Referring now to FIGURE 12, there is illustrated an alternate embodiment to that of FIGURE 9. In this embodiment, the video source 902 has associated therewith an optical region 1202, which optical region 1202 has disposed therein an embedded video code. This embedded video code could be relatively complex or as simple as a grid of dark and white regions, each region in the grid able to have a dark color for a logic "1" or a white region for a logic "0." This will allow a digital value to be disposed within the optical region 1202. A sensor 1204 can then be provided for sensing this video code. In the example above, this would merely require an array of optical detectors, one for each region in the grid to determine whether this is a logic "1" or a logic "0" state. One of the sensed video is then output to the PC 906 for processing thereof to determine the information contained therein, which information contained therein constitutes the primary routing information 904. Thereafter, it is processed as described hereinabove with reference to FIGURE 9.

Referring now to FIGURE 13, there is illustrated a block diagram for an embodiment wherein a user's profile can be forwarded to the original subscriber or manufacturer. The PC 906 has associated therewith a profile database 1302, which profile database 1302 is operable to store a profile of the user 908. This profile is created when the program, after initial installation, requests profile information to be input in order to activate the program. In addition to the profile, there is also a unique ID that is provided to the user 908 in association with the browser program that runs on the PC 906. This is stored in a storage location represented by a block 1304. This ID 1304 is accessible by a remote location as a "cookie" which is information that is stored in the PC 906 in an accessible location, which accessible location is actually accessible by the remote program running on a remote node.

The ARS 308, which basically constitutes the PC 1004 of FIGURE 10, is operable to have associated therewith a profile database 1308, which profile database 1308 is operable to store profiles for all of the users. The profile database 1308 is a combination of the information stored in profile database 1302 for all of the PCs 906 that are attachable to the system. This is to be distinguished from information stored in the database 310 of the ARS 308, the advertiser's database, which contains intermediate destination tables. When the routing information in the primary routing information 904 is forwarded to the ARS 308 and extracted from the original data packet, the lookup procedure described hereinabove can then be performed to determine where this information is to be routed. The profile database 1302 is then utilized for each transaction, wherein each transaction in the form of the routing information received from the primary routing information 904 is compared to the destination tables of database 310 to determine what manufacturer is associated therewith.

The associated ID 1304 that is transmitted along with the routing information in primary routing information 904 is then compared with the profile database 1308 to determine if a profile associated therewith is available. This information is stored

in a transaction database 1310 such that, at a later time, for each routing code received in the form of the information in primary routing information 904, there will associated therewith the IDs 1304 of each of the PCs 906. The associated profiles in database 1308, which are stored in association with IDs 1304, can then be assembled and transmitted to a subscriber as referenced by a subscriber node 1312 on the network 910. The ARS 308 can do this in two modes, a realtime mode or a non-realtime mode. In a realtime mode, each time a PC 906 accesses the advertiser database 310, that user's profile information is uploaded to the subscriber node 1312. At the same time, billing information is generated for that subscriber 1312 which is stored in a billing database 1316. Therefore, the ARS 308 has the ability to inform the subscriber 1312 of each transaction, bill for those transactions, and also provide to the subscriber 1312 profile information regarding who is accessing the particular product advertisement having associated therewith the routing information field 904 for a particular routing code as described hereinabove. This information, once assembled, can then be transmitted to the subscriber 1312 and also be reflected in billing information and stored in the billing information database 1316.

Referring now to FIGURE 14, there is illustrated a flowchart depicting the operation for storing the profile for the user. The program is initiated in a block 1402 and then proceeds to a function block 1404, wherein the system will prompt for the profile upon initiation of the system. This initiation is a function that is set to activate whenever the user initially loads the software that he or she is provided. The purpose for this is to create, in addition to the setup information, a user profile. Once the user is prompted for this, then the program will flow to a decision block 1406 to determine whether the user provides basic or detailed information. This is selectable by the user. If selecting basic, the program will flow to a function block 1408 wherein the user will enter basic information such as name and serial number and possibly an address. However, to provide some incentive to the user to enter more information, the original prompt in function block 1404 would have offers for such

things as coupons, discounts, etc., if the user will enter additional information. If the user selects this option, the program flows from the decision block 1406 to a function block 1410. In the function block 1410, the user is prompted to enter specific information such as job, income level, general family history, demographic information and more. There can be any amount of information collected in this particular function block.

Once all of the information is collected, in either the basic mode or the more specific mode, the program will then flow to a function block 1412 where this information is stored locally. The program then flows to a decision block 1414 to then go on-line to the host or the ARS 308. In general, the user is prompted to determine whether he or she wants to send this information to the host at the present time or to send it later. If he or she selects the "later" option, the program will flow to a function block 1415 to prompt the user at a later time to send the information. In the disclosed embodiment, the user will not be able to utilize the software until the profile information is sent to the host. Therefore, the user may have to activate this at a later time in order to connect with the host.

If the user has selected the option to upload the profile information to the host, the program will flow to the function block 1416 to initiate the connect process and then to a decision block 1418 to determine if the connection has been made. If not, the program will flow along a "N" path to a decision block 1420 which will timeout to an error block 1422 or back to the input of the connect decision block 1418. The program, once connected, will then flow along a "Y" path from decision block 1418 to a function block 1428 to send the profile information with the ID of the computer or user to the host. The ID is basically, as described hereinabove, a "cookie" in the computer which is accessed by the program when transmitting to the host. The program will then flow to a function block 1430 to activate the program such that it, at later time, can operate without requiring all of the setup information.

In general, all of the operation of this flowchart is performed with a "wizard" which steps the user through the setup process. Once complete, the program will flow to a Done block 1432.

Referring now to FIGURE 15, there is illustrated a flowchart depicting the operation of the host when receiving a transaction. The program is initiated at a Start block 1502 and then proceeds to decision block 1504, wherein it is determined whether the system has received a routing request, i.e., the routing information 904 in the form of a tone, etc., embedded in the audio signal, as described hereinabove with respect to FIGURE 9. The program will loop back around to the input of decision block 1504 until the routing request has been received. At this time, the program will flow along the "Y" path to a function block 1506 to receive the primary routing information and the user ID. Essentially, this primary routing information is extracted from the audio tone, in addition to the user ID. The program then flows to a function block 1508 to lookup the manufacturer URL that corresponds to the received primary routing information and then return the necessary command information to the originating PC ~~108~~ 112 in order to allow that PC ~~108~~ 112 to connect to the destination associated with the primary routing information. Thereafter, the program will flow to a function block 1510 to update the transaction database 1310 for the current transaction. In general, the routing information 904 will be stored as a single field with the associated IDs. The profile database 1308, as described hereinabove, has associated therewith detailed profiles of each user on the system that has activated their software in association with their ID. Since the ID was sent in association with the routing information, what is stored in the transaction database 1310 is the routing code, in association with all of the IDs transmitted to the system in association with that particular routing code. Once this transaction database 1310 has been updated, as described hereinabove, the transactions can be transferred back to the subscriber at node 312 with the detailed profile information from the profile database 1308.

The profile information can be transmitted back to the subscriber or manufacturer at the node 312 in realtime or non-realtime. A decision block 1512 is provided for this, which determines if the delivery is realtime. If realtime, the program will flow along a "Y" path to a function block 1514 wherein the information will be immediately forwarded to the manufacturer or subscriber. The program will then flow to a function block 1516 wherein the billing for that particular manufacturer or subscriber will be updated in the billing database 1316. The program will then flow into an End block 1518. If it was non-realtime, the program moves along the "N" path to a function block 1520 wherein it is set for a later delivery and it is accrued in the transaction database 1310. In any event, the transaction database 1310 will accrue all information associated with a particular routing code.

With a realtime transaction, it is possible for a manufacturer to place an advertisement in a magazine or to place a product on a shelf at a particular time. The manufacturer can thereafter monitor the times when either the advertisements are or the products are purchased. Of course, they must be scanned into a computer which will provide some delay. However, the manufacturer can gain a very current view of how a product is moving. For example, if a cola manufacturer were to provide a promotional advertisement on, for example, television, indicating that a new cola was going to be placed on the shelf and that the first 1000 purchasers, for example, scanning their code into the network would receive some benefit, such as a chance to win a trip to some famous resort in Florida or some other incentive, the manufacturer would have a very good idea as to how well the advertisement was received. Further, the advertiser would know where the receptive markets were. If this advertiser, for example, had placed the television advertisement in ten cities and received overwhelming response from one city, but very poor response from another city, he would then have some inclination to believe that either one poor-response city was not a good market or that the advertising medium he had chosen was very

poor. Since the advertiser can obtain a relatively instant response and also content with that response as to the demographics of the responder, very important information can be obtained in a relatively short time.

It should be noted that the disclosed embodiment is not limited to a single source PC 302, but may encompass a large number of source computers connected over a global communication network. Additionally, the embodiment is not limited to a single ARS 308 or a single advertiser server 312, but may include a plurality of ARS and advertiser systems, indicated by the addition of ARS 314 and advertiser server A 316, respectively. It should also be noted that this embodiment is not limited only to global communication networks, but also may be used with LAN, WAN, and peer-to-peer configurations.

It should also be noted that the disclosed embodiment is not limited to a personal computer, but is also applicable to, for example, a Network Computer ("NetPC"), a scaled-down version of the PC, or any system which accommodates user interaction and interfaces to information resources.

One typical application of the above noted technique is for providing a triggering event during a program, such as a sport event. In a first example, this may be generated by an advertiser. One could imagine that, due to the cost of advertisements in a high profile sports program, there is a desire to utilize this time wisely. If, for example, an advertiser contracted for 15 seconds worth of advertising time, they could insert within their program a tone containing the routing information. This routing information can then be output to the user PC 302 which will cause the user PC 302 to, via the network, obtain information from a remote location typically controlled by the advertiser. This could be in the form of an advertisement of a length longer than that contracted for. Further, this could be an interactive type of advertisement. An important aspect to the type of interaction

between the actual broadcast program with the embedded routing information and the manufacturer's site is the fact that there is provided information as to the user PC 302 and a profile of the user themselves. Therefore, an advertiser can actually gain realtime information as to the number of individuals that are watching their particular advertisement and also information as to the background of those individuals, profile information, etc. This can be a very valuable asset to an advertiser.

In another example, the producer of the program, whether it be an on-air program, a program embedded in a video tape, CD-ROM, DVD, or a cassette, can allow the user to automatically access additional information that is not displayed on the screen. For example, in a sporting event, various statistics can be provided to the user from a remote location, merely by the viewer watching the program. When these statistics are provided, the advertiser can be provided with profile information and background information regarding the user. This can be important when, for example, the user may record a sports program. If the manufacturer sees that this program routing code is being output from some device at a time later than the actual broadcast itself, this allows the advertisers to actually see that their program is still being used and also what type of individual is using it. Alternatively, the broadcaster could determine the same and actually bill the advertiser an additional sum for a later broadcast. This is all due to the fact that the routing information automatically, through a PC and a network, will provide an indication to the advertiser the time at which the actual information was broadcast.

The different type of medium that can be utilized with the above embodiment are such things as advertisements, which are discussed hereinabove, contests, games, news programs, education, coupon promotional programs, demonstration media (demos), and photographs, all of which can be broadcast on a private site or a public site. This all will provide the ability to allow realtime interface with the network and

the remote location for obtaining the routed information and also allow for realtime billing and accounting.

Referring now to FIGURE 16, there is illustrated a general block diagram of a disclosed embodiment. A keystroke automator (KA) 1600 is provided by a keystroke automator distributor to customers and is associated with that distributor via a KA ID stored therein. The KA 1600 is operable to read machine-resolvable code (MRC) (e.g., a bar code). The KA 1600 is either sold or freely distributed to customers for use with their personal computing systems. Since more and more products are being sold using MRCs, it can be appreciated that a user having the keystroke automator 1600 can scan MRCs of a multitude of products in order to obtain more information. Information about these products can be made immediately available to the user from the manufacturer for presentation by the user's computer 302. Beyond simply displaying information about the product in which the user is interested, the keystroke automator distributor may include additional advertising information for display to the user such as information about other promotions or products provided or sold by the keystroke automator distributor. Similarly, advertisers may provide catalogs of advertisements or information in newspapers or periodicals where the user simply scans the MRC associated with the advertisement using the keystroke automator 1600 to obtain further information. There is provided a paper source 1602 having contained thereon an advertisement 1604 and an associated MRC 1606. (Note that the disclosed concept is not limited to scanning of MRCs 1606 from paper sources 1602, but is also operable to scan a MRC 1606 on the product itself. Also, the keystroke automator 1600 can be any type of device that will scan any type of image having information encoded therein.)

After obtaining the keystroke automator 1600 from the keystroke automator distributor, the user connects the keystroke automator 1600 to their PC 302. During

a scanning operation, keystroke automator 1600 reads MRC data 1606 and the keystroke automator ID into a "wedge" interface 1608 for conversion into keyboard data, which keyboard data is passed therefrom into the keyboard input port of PC 302. The importance of the keystroke automator ID will be discussed in more detail hereinbelow.

The wedge interface 1608 is simply an interface box containing circuitry that accommodates inputs from both the keystroke automator 1600 and a computer keyboard 1610. This merely allows the information scanned by the keystroke automator 1600 to be input into the PC 302. In the disclosed embodiment, the wedge interface 1608 will convert any information. The data output from the keystroke automator 1600 is passed into the wedge interface 1608 for conversion into keyboard data which is readily recognizable by the PC 302. Therefore, the keystroke automator 1600 is not required to be connected to a separate port on the PC 302. This data is recognized as a sequence of keystrokes. However, the output of the keystroke automator 1600 can be input in any manner compatible with the PC 302. When not receiving keystroke automator data, the wedge interface 1608 simply acts as a pass-through device for keyboard data from the keyboard 1610. In any case, the information is ultimately processed by a processor in the PC 302 and can be presented to the user on a display 1612. The wedge interface 1608 is operable to provide a decoding function for the MRC 1606 and conversion thereof to keystroke input data.

In operation, the product code of a product is provided in the form of a MRC 1606. This MRC 1606 is the "link" to a product. The disclosed embodiment is operable to connect that product information contained in the MRC 1606 with a web page of the manufacturer of that product by utilizing the MRC 1606 as the product "identifier." The program operating on the PC 302 provides routing information to the ARS 308 after launching the browser on the PC 302 and connecting to the ARS

308 over the GCN 306, which ARS 308 then performs the necessary steps to cause the browser to connect to the manufacturer web site, while also providing for an accounting step, as will be described in more detail hereinbelow.

The MRC 1606 by itself is incompatible with any kind of network for the purposes of communication therewith. It is primarily provided for a retail-type setting. Therefore, the information contained in the MRC 1606, by itself, does not allow for anything other than identification of a product, assuming that one has a database 1614 containing information as to a correlation between the product and the MRC 1606.

The wedge interface 1608 is operable to decode the MRC 1606 to extract the encoded information therein, and append to that decoded MRC information relating to an ID for the keystroke automator 1600. This information is then forwarded to the ARS 308 by the resident program in the PC 302. This is facilitated by intermediate routing information stored in the program indicating to which node on the GCN 306 the scanned MRC information is to be sent, i.e., to the ARS 308. It is important to note that the information in the MRC 1606 must be converted from its optical image to numerical values which are then ultimately input to the keyboard input port of PC 302 and converted into data compatible with communication software residing on the PC 302 (in this case, HTML language for insertion into a browser program). When the scanned information is input to the PC 302, the resident program launches the browser program and then assembles a communication packet comprised of the URL of the ARS 308, the keystroke automator ID and the user ID. If another type of communications program were utilized, then it would have to be converted into language compatible with that program. Of course, a user could actually key in the information on the MRC 1606 and then append the appropriate intermediate routing information thereafter. As will be described hereinbelow, the intermediate routing information appended thereto is the URL of the ARS 308 disposed on the GCN 306.

As part of the configuration for using the keystroke automator 1600, the PC 302 hosts keystroke automator software which is operable to interpret data transmitted from the keystroke automator 1600, and to create a message packet having the scanned product information and keystroke automator ID, routing information, and a user ID which identifies the user location of the keystroke automator 1600. The keystroke automator software loads at boot-up of the PC 302 and runs in the background. In response to receiving a scanned MRC 1606, the wedge interface 1608 outputs a keystroke code (e.g., ALT-F10) to bring the keystroke automator program into the foreground for interaction by the operating system. The keystroke automator program then inserts the necessary information into the browser program. The message packet is then transmitted to interface 304 across the global communication network 306 to the ARS 308. The ARS 308 interrogates the message packet and performs a lookup function using the ARS database 310. If a match is found between particular parameters of the message packet, a return message packet is sent back to the PC 302 for processing.

The keystroke automator program running on PC 302 functions to partition the browser window displayed to the user into several individual areas. This is for the purpose of preparing to present to the user selected information in each of the individual areas (also called "framing"). The selected information comprises the product information which the user requested by scanning the MRC 1606 using the keystroke automator 1600, information about the keystroke automator distributor which establishes the identity of the company associated with that particular keystroke automator 1600, and at least one or more other frames which may be advertisements related to other products that the keystroke automator distributor sells. Note that the advertisements displayed by the keystroke automator distributor may be related to the product of interest or totally unrelated. For example, if a user scans the MRC 1606 of a soda of Company A, the keystroke automator distributor may generate an advertisement of a new soft drink being marketed by Company A,

that it sells. On the other hand, the keystroke automator distributor may also structure the display of information to the user such that a user requesting product information of a Product X may get the requested information of Product X along with advertisements for a competing item Product Y. Essentially, the keystroke automator distributor is free to generate any advertisement to the user in response to the user requesting product information.

The return message packet transmitted from the ARS 308 to the PC 302 is then transmitted back across the GCN 306 to the advertiser server 312. The advertiser server 312 restructures the message packet and appends the particular product information for transmission back to the PC 302. Upon receiving the particular advertiser information from advertiser server 312, the PC 302 then retransmits a message to the keystroke automator distributor site 1616 and E-commerce site 1618 to obtain the information that needs to be framed in the browser window displayed to the user.

Therefore, the keystroke automator 1600 is associated with the keystroke automator distributor by way of the keystroke automator ID such that scanning a product MRC 1606 in order to obtain information about that particular product generates one or more responses from one or more remote sites disposed on the GCN 306. Stored in the keystroke automator 1600 is the keystroke automator ID which establishes its relationship to the keystroke automator distributor. Proprietary keystroke automator software running on the PC 302 operates to decode scanned MRC information and the keystroke automator ID received from the keystroke automator 1600 and wedge interface 1608, and also provides a unique user ID for establishing the location of the user of the keystroke automator 1600. The keystroke automator software also assembles message packets and works in conjunction with the onboard communication software (e.g., a browser) to automatically route the

message packets across the GCN 306 such that the one or more remote sites disposed on the GCN 306 return information to be framed for presentation to the user.

Referring now to FIGURE 17, there is illustrated a conversion circuit of the wedge interface. A microcontroller 1700 provides conversion of the data from the keystroke automator 1600 and controls interfacing of the keyboard 1610 and keystroke automator 1600 with the PC 302. The microcontroller 1700 has contained therein a memory 1702 or it can have external memory. There are provided a plurality of keystroke automator interfaces 1704 to the keystroke automator 1600, a plurality of PC interfaces 1706 to the PC 302, and plurality of keyboard interfaces 1708 to the keyboard 1610. In general, the keystroke automator interfaces 1704 comprise a serial data line, a ground line, and a power line. Similarly, the keyboard interfaces 1708 comprise a serial data line, a ground line, a clock line, and a power line. The PC 302 provides a clock line, a power line, a serial data, and a ground line for input to the microcontroller 1700. The microcontroller 1700 is operable to receive signals from the keyboard 1610 and transfer the signals to the PC 302 as keyboard signals. Operation with the keyboard 1610 is essentially a "pass-through" procedure. Data output from the keyboard 1610 is already in keyboard format, and therefore requires no conversion by the wedge interface 1608. With respect to the keystroke automator 1600, the serial data is not compatible with a keyboard 1610 and, therefore, it must be converted into a keyboard format in order to allow input thereof to the keyboard input of the PC 302.

The microcontroller 1700 performs this function after decoding this MRC information, and conversion of this MRC information into an appropriate stream of data which is comprised of the MRC information and the appended URL. This appended URL will be pre-stored in the memory 1702 and is programmable at the time of manufacture. It is noted that the memory 1702 is illustrated as being contained within the microcontroller 1702 to provide a single chip solution.

However, this could be external memory that is accessible by the microcontroller 1702. Therefore, the microcontroller 1700 provides an interface between the keystroke automator 1600 and the keyboard 1610 to the PC 302 which allows the keystroke automator 1600 to receive coded information and convert it to keyboard strokes or, alternatively, to merely pass-through the keystrokes from the keyboard 1610. Therefore, the user need not install any type of plug-in circuit board into the motherboard of the PC 302 in order to provide an interface to the keystroke automator 1600; rather, the user need only utilize the already available keyboard port in order to input the appropriate data into the system.

In this particular disclosed embodiment, the microcontroller 1700 comprises a PIC16C73 microcontroller by *Microchip Technologies*™. The PIC16C73 device is a low cost CMOS 8-bit microcontroller with an integrated analog-to-digital converter. The PIC16C73 device, as illustrated in the disclosed embodiment, has 192 bytes of RAM and 4k x 4 of EPROM memory. The microcontroller 1700 can accommodate asynchronous or synchronous inputs from input devices connected to it. In this disclosed embodiment, communication to the keyboard 1610 is synchronous while it is asynchronous when communicating with keystroke automator 1600.

It should be noted that, although in this particular embodiment MRC information of the MRC 1606 is input into the keyboard input port of the PC 302, disclosed methods may also be advantageously utilized with high speed port architectures such as Universal Serial Bus ("USB") and IEEE 1394.

MRCs (e.g., bar codes) can be structured to be read in either direction. Timing considerations need to be addressed because of the variety of individuals scanning the MRC introduce a wide variety of scan rates. Bar codes use bars of varying widths. The presence of a black bar generates a positive pulse, and the

absence of a black bar generates no pulse. Each character of a conventional bar code has associated therewith seven pulses or bars. Depending on the width of the bars, the time between pulses varies. In this disclosed embodiment, the interface circuitry 1608 performs a "running" calculation of the scan time based upon the rising edge of the pulses commencing with the leader or header information. The minimum and maximum scans times are calculated continuously in software with the interface 1608 during the scanning process to ensure a successful scan by the user.

Referring now to FIGURE 18, there is illustrated a sample message packet transmitted from the user's PC 302 to the ARS 308. The message packet 1800 comprises a number of bits of information including the MRC information 1802 obtained from the user scanning the MRC 1606 with the keystroke automator 1600; the keystroke automator ID 1804 which is embedded in a memory in the keystroke automator 1600 and identifies it with a particular keystroke automator distributor; and a user ID 1806 which is derived from the software running on the PC 302 and which identifies uniquely with the user location. Note that the message packet includes other necessary information for the proper transmission for point to point.

Referring now to FIGURE 19, there is illustrated a more detailed block diagram of the routing of the message packets in order to present the framed information to the user. As is mentioned hereinabove, when the user scans a MRC 1606 using the keystroke automator 1600, a keystroke automator program running on the user PC 302 is operable to interpret the information output by the keystroke automator 1600 and generate a message packet for transmission over the GCN 306. The keystroke automator program assembles the message packet such that it is directed to the ARS 308 disposed on the GCN 306. The message packet contains several pieces of information including the keystroke automator ID 1804 which links it to the keystroke automator distributor, the user ID 1806 which identifies the particular user using the keystroke automator 1600, and MRC information 1802

describing a particular product of interest to the user. This message from the PC 302 is transmitted over a path 1900 to the ARS 308 where the ARS database 310 is accessed to cross reference the ID information 1804 and MRC information 1802 to a particular advertiser and keystroke automator distributor. The ARS 308 returns a message packet over a path 1902 to the user PC 302 which contains routing information as to the location of various other sites disposed on the GCN 306, for example, the advertiser server 312 and keystroke automator distributor site 1616.

It can be appreciated that other information can also be provided by the ARS 308 which more closely targets the particular user of the keystroke automator 1600. For example, if it is known that a particular keystroke automator 1600 is sold in a certain geographic area, this information can be useful in targeting the particular user with certain advertising information relevant to that geographic area. In any case, the information returned from the ARS 308 over path 1902 provides enough information for the keystroke automator program running on the user PC 302 to identify a number of other sites disposed on the GCN 306. The user PC 302 then processes the return message packet and routes another message packet over a path 1904 to the advertiser server 312. The advertiser server 312 then returns product information of the particular product in which the user was interested back to the user PC 302 over a path 1906. Similarly, the user PC 302 routes information (e.g., the URL of the keystroke automator distributor site and the user profile) to the keystroke automator distributor site 1616 over a path 1908 in order to obtain information back over a path 1910 for framing any banners which identify the keystroke automator distributor. Additionally, the user PC 302 forwards a message packet to the E-commerce site 1618 over a path 1912 in order to return information regarding any particular advertisements the keystroke automator distributor wants to display to the user. The advertisements are returned to the PC 302 over a path 1914.

Referring now to FIGURE 20, there is illustrated a block diagram of a browser window according to the disclosed embodiment. The browser window 2000 is partitioned into a plurality of areas for framing specific information. A MRC area 2002 displays that product information in which the user was interested; a keystroke automator-specific area 2004 displays information about the keystroke automator distributor; and an E-commerce area 2006 displays advertising information that the keystroke automator distributor selects for display according to this particular user and keystroke automator 1600. As mentioned hereinabove, a program operable to process scanned MRC information with the unique keystroke automator 1600 develops the browser window by partitioning it into specific areas for the framing of information. Therefore, information returned from the E-commerce site 1608 is passed through the GCN 306 to the particular E-commerce frame 2006. Similarly, information about the particular product of interest is returned from the advertiser site 312 across the GCN 306 to the particular MRC specific area 2002. Information placed in the keystroke automator-specific area 2004 is information about the keystroke automator distributor which is returned from the keystroke automator distributor site 1616 across GCN 306.

Referring now to FIGURE 21, there is illustrated a structure of information contained in the ARS database. The ARS database 310 contains a variety of information required to properly interrogate and assemble packets for obtaining information from the various sites disposed on the GCN 306. The ARS database 310 has a database structure 2100 which contains addresses for the web sites containing the product information requested by the user when scanning the MRC 1606 with the keystroke automator 1600. Under a Product heading 2102 are listed the particular MRCs and associated routing information for addressing the respective server location. For example, the ARS server 308 may contain any number of advertisers having unique URL addresses associated therewith. Therefore, the MRC 1606 of a particular product is associated with a unique URL address which routes any request

for information of that product to that particular advertiser's site. Also part of the ARS database structure 2000 is a heading of Keystroke automator 2104 under which is the keystroke automator ID 1804 and the distributor associated with that keystroke automator ID 1804.

It can be appreciated that there may be a number of distributors using the disclosed architecture such that each distributor has an ID embedded in the keystroke automator 1600 which uniquely identifies that keystroke automator with the particular distributor. Therefore, the unique keystroke automator ID 1804 needs to be listed with the respective distributors of that keystroke automator 1600 in order to process the information that needs to be framed and displayed to that particular user. Another heading under the ARS database structure 2100 is a user heading 2106 which contains profile information associated with that particular user ID 1806. As mentioned hereinabove, the user ID 1806 is obtained via the keystroke automator software running on the PC 302 and upon installation or subsequent configuration may request that the user input certain profile information which may be used to target that particular user with products and services which identify with that user profile. The ARS database structure 2100 also contains an E-commerce heading 2108 which contains information related to the MRC 1606 and an advertisement that may be triggered by the request for that information. For example, any MRC 1606 associated with a paper ~~source1602~~ source 1602 can be associated with the specific information in the ARS database 310. A user wishing to obtain information about a specific soft drink may, in fact, trigger an advertising response of a competitor product. Similarly, the user interested in information about that particular soft drink may also trigger information which is relevant to that particular product or a product which may normally be served in conjunction with that soft drink. Furthermore, if the user profile indicates that this individual has significant interest in finance or insurance, the request for information regarding this particular MRC product may trigger advertisement from an E-commerce server 1618 related to information about finance

and insurance. It should be noted that the information described as contained within the ARS database structure 2100 is not limited to what has been described, but may comprise any number of pieces of information used to present desired information to the computer display of the user.

Referring now to FIGURE 22, there is illustrated a flowchart of the process of receiving information from the user's perspective, and according to the disclosed embodiment. The keystroke automator software running on the user's PC 302 runs in the background until activated by output from the keystroke automator 1600. Therefore, flow moves to a decision block 2200 where if a scanned input does not occur, flow moves out the "N" path and loops back to the input of decision block 2200. On the other hand, if scanned input information is received, flow moves out the "Y" path to a function block 2202 where the keystroke automator software assembles a message packet containing the MRC information, the keystroke automator ID 1804 and the ARS 308 URL address. Additionally, the browser is launched in which this information is placed for transmission to the ARS 308. Flow then moves to a function block 2204 where the browser is partitioned into any number of areas in which information is displayed when obtained from the keystroke automator distributor site 1616, the E-commerce site 1618, and the advertiser server 312. It should be known that although three frames are shown in the particular window 2000 of this embodiment, the number of frames displayed in the window 2000 is limited only by the available real estate of the window 2000 area itself.

After the keystroke automator software partitions the browser window into one or more frames in preparation of receipt of return information, flow moves to a decision block 2206 where the computer waits for information to be returned from the various sites disposed on the GCN 306. If information is not returned, flow moves out the "N" path and simply loops back to the input to continue monitoring for receipt of the information. If information has been received, flow moves out the

"Y" path to a function block 2208 where routing information for each frame (or partitioned area of the window 2000) is inserted into one or more packets for transmission to the various sites. The various sites then return the requested information back to the PC 302, as indicated in function block 2210. Flow is then to a function block 2212 where the proprietary software working in conjunction with the hosted browser places the returned information into the respective frames of the window. The user, viewing the display at PC 302, then perceives a variety of information, one of which is the particular product information which he or she requested, in addition to keystroke automator distributor information, and possibly other advertisements based upon the user's profile.

Referring now to FIGURE 23, there is illustrated a flowchart of the process according to the ARS. The ARS 308 is operable to decode and process messages received from the GCN 306. Therefore, flow is to a decision block 2300 where, if MRC information is not received, flow is out the "N" path with loop-back to its input. If MRC information has been received, flow is to a function block 2302 where a matching process occurs to link the bar-coded product information to its respective manufacturer. The ARS database 310 also associates the URL address of the manufacturer's server. When a match is found, the ARS 308 begins to assemble a message packet of information for transmission back to the PC 302, as indicated in function block 2304. The message packet contains the product information and the URL address of the manufacturer's website. Flow then moves to a decision block 2306 where the keystroke automator ID 1804 is compared with the list of keystroke automator IDs issued by the particular keystroke automator distributor. If the keystroke automator ID 1804 is validated, flow moves out the "Y" path to a function block 2308 where the message packet is appended with the keystroke automator ID 1804 and distributor routing address. Flow then moves to a decision block 2310 where the ARS 308 determines if any E-commerce information is to be associated with a particular keystroke automator ID 1804. If so, flow is out the "Y" path to a

function block 2312 where the message packet is appended with the E-commerce routing string. The E-commerce routing string provides addressing for the E-commerce server 1618. Flow then moves to a function block 2314 where all message packets are returned back to the PC 302 for processing.

Referring back to decision block 2306, if the keystroke automator ID 1804 is determined to be invalid, flow moves out the "N" path and jumps forward to the input of decision block 2314, since the lack of a keystroke automator ID 1804 interrupts the link to any advertising provided by the E-commerce server 1618. At this point, the only information provided is the link to the advertiser server 312 for return of product information. Referring now to decision block 2310, if no E-commerce information is available, flow moves out the "N" path and jumps forward to the input of function block 2314 where the message packet back to the PC 302 contains only the URL of the advertiser server 312, the MRC information, the distributor server 1616 address and keystroke automator ID 1804 information.

Referring now to FIGURE 24, there is illustrated a flowchart of the process performed at the E-commerce site. The E-commerce server 1618 receives the message packet from the user PC 302, as indicated in function block 2400, and decodes the packet to perform a match with the MRC information. Moving on to a decision block 2402, if the match is unsuccessful, flow is out the "N" path to a function block 2404 where the match is rejected. A message may be returned to indicate that a problem occurred and the user may need to re-scan the product MRC 1606. If a successful match occurs, flow moves out the "Y" path to a function block 2406 where the keystroke automator ID 1804 is matched with the MRC product information. The MRC information may be distributed to customers over a large geographic area. However, the keystroke automator 1606 may be coded for certain geographic areas. For example, a keystroke automator 1600 having an XXX ID may be restricted for sale in the Southwestern United States while a keystroke automator

1600 having a YYY ID may be sold only in the Northeast. In this way, geographic areas may be targeted with advertising more appealing to that particular area. Advertising returned to the user PC 302 may be focused further by obtaining a user profile when the software or keystroke automator 1600 are installed. In this way, advertising may be focused based upon the user profile. Therefore, flow moves to a function block 2408 to lookup the E-commerce action based upon the keystroke automator ID 1804 and the MRC information. Flow moves to a function block 2410 to assemble all the information into a packet for return to the user PC 302. The product information and/or user profile information may be returned. Flow is then to a function block 2412 where the message packet is transmitted.

AUTOMATED TRANSACTION USING A PORTABLE SCANNER

Referring now to FIGURE 25, there is illustrated one embodiment of the disclosed automatic commerce transaction architecture. A user enters a store (or kiosk) and registers to obtain a portable scanner 2500 used in purchasing an article of commerce 2502, which each article of commerce 2502 contains an MRC 2504, which MRC 2504 a unique number which uniquely identifies that article of commerce 2502. The scanner 2500 is part of a system which allows the user to essentially "beam and buy" when shopping. During registration, the user provides credit account information (e.g., credit card) such that the purchase of any article of commerce 2502 can be conveniently transacted with the user's credit card information contained in a database. (This may have been done prior to such entry via a user account at the store.)Furthermore, during this registration process, the portable scanner 2500 contains a unique scanner ID which is associated with a user ID generated after receiving all user account and personal information such that the portable scanner 2500 is uniquely identified with that user during the purchasing process, at that time.

The user is now free to roam around the store to make purchases by scanning any one of a number of MRCs 2504 associated with the respective articles of commerce 2502. Alternatively, the user may look through catalogs of products having articles of commerce 2502 contained therein and associated MRCs which can be scanned by the scanner 2500 of the user. When the user has completed the selection process, the user then transmits the MRC data 2504 of the purchased articles of commerce 2502 by pressing a transmit button 2506 located on the portable scanner 2500. The transmitted data is received by a receiver 2508 connected to a PC (or POS - Point of Sale) system 2510. The scanner ID is then extracted from the transmitted data and used to retrieve the associated user ID from a local database 2512 (or a database at some other location). Both the MRC data and the user ID are then assembled into a message packet and transmitted (in accordance with appended routing information which indicates the network address of the destination server) through a network interface 2514 across the GCN 306 through an account reference server (ARS) 2516. (The account reference server 2516 is similar in function and operation to the advertiser reference server 308.)

The ARS 2516 has associated therewith an ARS database 2518 which contains all the user account and personal information previously entered during registration and other information which will be discussed in greater detail hereinbelow. After the user ID and selected MRCs are transmitted to the ARS 2516, an operation is performed with the ARS database 2518 to obtain information related to the vendors of the articles of commerce 2502 having the respective MRCs 2504, and the user credit account information. For example, the user ID is used to obtain a match with one or more credit card company network URL addresses associated with credit accounts of the user. The MRCs are used to obtain a match with respective network URL addresses of vendor web servers (also disposed on the GCN 306) having information about of the respective articles of commerce 2502 having the respective MRCs 2504.

When an MRC 2504 obtains a match, in the ARS database 2518, the URL address of a vendor server 2520 is returned to the PC/POS 2510. In turn, the PC/POS 2510 then connects to the vendor server 2520 and causes the vendor server 2520 to access an associated database 2522 to return a web page of the product information for presentation on the display 1612 of the PC/POS 2510. At or near the same time, the user ID is used to obtain a match of a URL network address of a credit card company web server in the ARS database 2518 such that the credit card company URL causes the ARS 2516 to connect to a credit card account server 2524 to perform verification of credit account information of the user for the present purchase. If the particular credit card account funds are sufficient to handle the current purchase, the credit card account 2524 then routes information to the vendor server 2520 to complete the transaction. On the other hand, if the credit card account server 2524 determines that the credit of the user is insufficient for the current transaction, a message is sent back to the ARS 2516 such that the ARS 2516 then accesses a second entry of credit card company network address of the user from the ARS database 2518 causing the ARS 2516 to access a second credit card account server 2526 to provide similar verification of sufficient funds for the current transaction.

As the product information is being displayed to the user at PC/POS 2510, the user may be offered a confirmation selection in order to confirm or deny the purchase of the particular product. Alternatively, the purchase may be confirmed as soon as the individual transmits the scanned product information from the portable scanner 2500 to the POS/PC system 2510 in which the user is now not offered the option of affirming or denying a particular purchase.

Similarly, where implemented, a second MRC match is performed using the ARS database 2518 in order to obtain a network URL of a vendor of that respective article of commerce 2502 such that the ARS 2516 is then routed to a second vendor

server 2528 in accordance with the retrieved vendor URL of the respective MRC. The second vendor server 2528 has associated therewith a database 2530 which supports its various product information and accounts. Therefore, as that particular MRC is being processed, the vendor server 2528 returns product information to the PC/POS 2510 for display to the user. Alternatively, none of the vendor servers need to return information for display to the user at the PC/POS 2510 such that all the user views is a message indicating that transactions are being processed. In accordance with the purchase of this second MRC 2504 related to an article of commerce 2502, the same credit card network transactions occur according to the first credit card or the second credit card (or further credit cards) based on sufficient funds to transact the purchase of the respective article of commerce 2502.

Upon completion of the transactions, the user then may be notified that the articles are being shipped via a common carrier (e.g., UPS, FEDEX) or the store may be operable to provide the purchased products to the user at a time prior to the user departing the store. It can be appreciated that the store need not be of a kiosk-type which offers a wide variety of products from various manufacturers, for example, clothing, food products, furniture, etc., but may be a chain store which handles only products it manufactures. In this scenario, only a single vendor server may be necessary as it contains all of the products manufactured by that particular company, and the information associated therewith.

Referring now to FIGURE 26, there is illustrated a disclosed embodiment having a local database which stores the vendor and credit card company network addresses. In this particular embodiment, the user enters the store and registers to receive the portable scanner 2500 and uses it to scan articles of commerce 2502 having an MRC 2504 attached thereto. Upon making the desired selections for purchase, the user presses the transmit button 2506 to transmit the MRC information and unique scanner ID to the receiver 2508 connected to the PC/POS 2510. It can be

appreciated that the articles of commerce 2504 need not be actually physically present to be scanned, but can also be photographs of the particular article in a catalog such that the user scans the MRC off of a piece of paper in the catalog next to the particular article in commerce 2502. Since the user has already registered to receive the portable scanner 2500, the local database 2512 now stores the information previously stored in the ARS database 2518, for example, the user ID, scanner ID for a number of scanners, user credit card information, the MRC data, and network address for the credit card company servers and vendor servers.

Therefore, when the user transmits the MRC data and scanner ID from the portable scanner 2500, a matching operation is performed using the user ID and the MRC information on the local database 2512 to obtain the respective network addresses of the vendor servers (2520 and 2528) and credit card server (2524 and 2526). The return product information is then displayed to the user via the display 1612 connected to the PC/POS 2510 (if so desired). The keyboard 1610 is provided in both FIGURES 25 and 26 in the case of manual entries required by an attendant at the PC/POS 2510, or perhaps the user. In operation, the transmitted scanner ID from the scanner 2500 is then used to perform a match on the local database 2512 to retrieve the associated user ID. The user ID is then used to match the respective user credit card account information and credit card server URLs which point to one or more credit card servers 2524 and 2526 on the GCN 306. Similar in operation to the embodiment of FIGURE 25 hereinabove, the MRCs are used to match information on the local database 2510 to return the network URL addresses of one or more of vendor servers 2520 and 2528 to obtain product information about the article of commerce selected for purchase.

Referring now to FIGURE 27, there is illustrated a flowchart of the process of a disclosed embodiment. The user first enters the store as indicated in the function block 2700 and requests a portable scanner 2500, as indicated in function block

2702. If this is the first time that the user has visited the store to make a purchase using the scanner 2500, the store will then request credit information of the user including one or more credit cards which can be used to pay for the select purchases. Upon completion of receiving the credit information and personal information, a user ID is generated that is associated with the user, and the personal and credit information. Additionally, the portable scanner 2500 has associated therewith a unique scanner ID which is also then associated with the user (via the user ID) during this purchasing transaction. If the user had visited the store in the past and had already provided the credit account information and personal information, the user would not be requested to submit the same information again, but would simply be issued the portable scanner 2500 and have the particular scanner ID associated with the user account, as indicated in the function block 2704.

In a function block 2706, the user scans the MRC 2504 attached to the article of commerce 2502 which the user wants to buy. Flow is then to a decision block 2708 where the user determines if he or she is finished purchasing any more articles of commerce 2502. If not, flow is out the "N" path to the input of a function block 2706 where the user continues to scan other MRCs of articles of commerce 2502 selected for purchase. On the other hand, if the user has finished the purchase process, flow is out the "Y" path of decision block 2708 to another decision block 2710 where the user determines if he or she wishes to delete any of the selected products for purchase. If so, flow is out the "Y" path to a function block 2712 where the user may then selectively delete any of the selections previously made by viewing stored MRCs via a small alphanumeric display, which can be incorporated into the scanner 2500. In lieu of the alphanumeric display, it the user knows that the third MRC scanned si the one to be deleted, an LED indicator could be used by flashing three times when the user has scrolled to the third MRC in memory. The user could then press one or a combination of buttons to deleted the third MRC. Similarly, one or more audio signals could sound when the corresponding MRC

register has been accessed. If user chooses not to delete any of the selected articles of purchase, flow is out the "N" path of decision block 2710 to a function block 2714 where the user then transmits the selected purchases to the PC/POS 2510. The user will then simply obtain a receipt for the selected purchases or may choose not to obtain a receipt, as indicated in a function block 2716. Flow is then to a function block 2718 where the user then returns the scanner 2500 to the store and the process ends.

Referring now to FIGURE 28, there is illustrated a more detailed flowchart of the transaction process from the perspective of the POS. Flow begins at a decision block 2800 to determine if the user is a first-time user of the disclosed architecture. If so, flow is out the "Y" path to a function block 2802 where the user is requested to enter user account information and personal information which is ultimately stored in the ARS database 2518 of the ARS server 2516, and as a result of this personal information, a user ID is generated which is uniquely identified with the particular user and user account information. Flow is then to a function block 2804 where the scanner ID of the particular portable scanner 2500 issued to the user is then entered into a local database 2512 along with the user ID. Flow continues to a function block 2806 where the user is then issued the scanner 2500 for use in making selected purchases. Flow is then to decision block 2808 where the PC/POS 2510 waits for the receipt of information. If no information is received, flow is out the "N" path back to the input of decision block 2808 to continue waiting for input of information.

If data has been received, flow is out the "Y" path of decision block 2808 to a function block 2810 where the PC/POS 2510 extracts the scanner ID data. Flow is then to a function block 2812 where the scanner ID is used in a matching operation on the PC/POS database 2512 to obtain the associated user ID. Flows is then to a function block 2814 where the purchase is processed, which purchasing process will be discussed in greater detail hereinbelow on a subsequent flowchart. Flow is then to

a function block 2816 where the user is issued a receipt, if requested, detailing the particular purchases. This completes the commercial transaction. Flow continues to a function block 2818 where the user returns the scanner 2500 and the scanner ID is disassociated from the user ID and user account information. Flow is then to a stopping point.

Referring now to FIGURE 29, there is illustrated a detailed flowchart of the purchasing process of a disclosed embodiment. Flow begins at a function block 2900, where after the user has finished making selections of articles of commerce 2502 for purchase, the user transmits the MRCs and scanner ID to the PC/POS 2510. The scanner ID is then used to match up with the user ID in either the local database 2512 or the remote database 2518. Continuing on with function block 2900, the user ID and selected MRCs are then transmitted to the ARS server 2516 in accordance with routing information provided by the PC/POS 2510. Flow is then to a function block 2902 where the user ID is used to obtain the URL address of one or more credit card companies which the user utilizes in making purchases, and has provided for use in payment of selected purchases. This matching process can occur either at the local database 2512 or at the remote ARS database 2518 of the ARS server 2516.

Flow is then to a function block 2904 where the MRCs of the articles of commerce 2502 which the user selected for purchase are used to obtain matching vendor URL network addresses for corresponding vendor servers also disposed on the GCN 306. Flow is then to a function block 2906 where a vendor product web page is returned for display to the user on the display 1612 of the PC/POS 2510. As noted hereinabove, the product information need not be displayed to the user on the display 1612, but may simply be ignored or not provided at all. However, at this point, it can be implemented where the user can either affirm or deny selection of a product by the vendor also providing a button on the graphical user interface of the PC/POS 2510 which allows the user to either affirm or deny purchase of the

respective article of commerce 2502. Flow is then to a function block 2908 where the user credit card information obtained from the matching operation is transmitted to the respective credit card company web account server 2524. Flow is to a decision block 2910 to determine if the user has enough credit with the credit card company to pay for the selected purchase. If not, flow is out the "N" path to a function block 2912 where the next credit card listed in the user account information is selected and accessed to determine if sufficient credit exists for the selected purchase. The flow then loops back into the input of the function block 2908 to transmit the user credit account information to the second credit card web account server 2526 to determine if there is sufficient credit to make the purchase.

On the other hand, if there is sufficient credit to make the purchase, flow is out the "Y" path of decision block 2910 to a function block 2914 where the credit card account information is then transferred to the respective vendor web account server (e.g., 2524 or 2526) associated with the particular MRC 2504 of the article of commerce 2502 being purchased. Flow is then to a function block 2916 indicating that all purchase transactions have now been completed. Flow continues to a function block 2918 where the vendor can either ship the articles to the user's address as provided in the personal account information, or the user can be provided with the purchased of articles of commerce 2502 at the store in which the selections were made. Flow is then into an End point.

Referring now to FIGURE 30, there is illustrated a detailed block diagram of the portable scanner 2500 in operation with the PC/POS 2510. This is a general block diagram of the components of the portable scanner 2500 and may contain more or less as needed to fulfill the desired functions of the scanner 2500. Scanner 2500 incorporates a CPU 3000 for handling all onboard monitoring and control functions of the unit. Attached thereto is a memory 3002 for storing MRCs 2504 which are associated with articles of commerce 2502 selected for purchase. Also connected to

the CPU is a scanner head 3004 which incorporates all the emitter/detector electronics for reading MRC data 2502. A scan enable button 3006 is used to initiate or enable scanning of MRC information into the memory 3002 of the scanner 2500. In response to a successful scan of an MRC 2504 of the article of commerce 2502, one or more read indicators 3008 are provided which can provide, for example, a light indicator, or an audio indicator, etc. The scanner 2500 can also include an alphanumeric display 3022 which connects to the CPU 3000 for allowing the user to scroll through scanned MRCs, and if desirable, to selectively delete any MRCs related to products the user no longer wishes to purchase.

The read indicator 3008 is utilized to indicate that a code has successfully been read. Typically, the scanning operation may not have accurately read the code due to missing information. A code is deemed "read" when both the start portion of the code and the end portion of the code are accurately detected and sufficient data in between the start and stop indicator is sufficiently read. This is all achieved through a decoding operation of the bar code including the type of information retrieved therefrom. Once read, this indicates to the user that the code has been read and stored in the memory 3002. This can then later be transferred as described hereinabove.

After completing the scanning of all articles of commerce 2502 selected for purchase, the user then depresses the transmit button 2506 which causes the CPU 3000 to retrieve the MRC data and the scanner ID data stored in the memory 3002, and pass it to a modulator 3010, which modulator 3010 prepares the data for transmission through a receiver 3012 across an antenna 3014 to a receiving antenna 3016 attached to a receiver 3018. The receiver 3018 may be assembled in conjunction with a demodulator 3020 for demodulating the modulated signal received from the scanner 2500. The demodulator 3020 and receiver 3018 also may be a unit internal to the PC/POS 2510. The display 1612 is provided with the

PC/POS 2510 to display information to either an attendant or the user while the purchases are being made, or at the finality of the transaction. A battery 3024 connects to the CPU 3000 to provide power for all onboard circuits.

Referring now to FIGURE 31, there is illustrated a physical diagram of the portable scanner 2500. This particular embodiment of the scanner 2500 is in the shape of a pen 3100. The pen 3100 comprises a standard writing portion 3102 for use as a writing instrument. Furthermore, the pen 3100 also comprises a scanner function provided by the scanner head electronics 3004 located at the opposite end of the writing portion 3102. The scanner head 3004 extends partially outside the surface of the pen 3100 for scanning MRCs 2504. Also contained within the pen 3100 are onboard circuits 3104 which contain the memory 3002, the CPU 3000, the modulator 3010, transmitter 3012, and antenna 3014. The onboard circuits 3104 interface to a battery structure 3106 (similar to battery 3024) which provides onboard power for portable use of the scanner 2500. The alphanumeric display 3022 also connects to the onboard circuits to display information corresponding to the MRCs. Attached to the onboard circuit 3104 are the read indicators 3008 which comprise, for example, an LED 3108 and/or a speaker 3110 for providing some confirmation that the MRC 2504 has been properly scanned. Also connected to the onboard circuit 3104 is the scan enable button 3006, and the data transmit button 2506 for enabling transmission of the stored MRC and scanner ID information to the PC/POS 2510.

Referring now to FIGURE 32, there is illustrated a database structure used in accordance with a disclosed embodiment. For example, when the user has completed selection of articles of commerce 2502 for purchase, he or she transmits the MRC and scanner ID data to the PC/POS 2510 for processing. The PC/POS 2510 then obtains the user ID associated with the scanner ID in use by the user and transmits the user ID and MRC data to the ARS server 2516 having the associated

ARS database 2518 in order to retrieve further information regarding the vendor network URL address and the credit card company network address. Therefore, the ARS database 2518 includes the MRC data 3200, the user ID data 3202, the account information 3204, the vendor URL information 3206 and one or more credit card URL network addresses 3208 and 3210 which have association with respective credit company servers (2524 and 2526).

Notably, the portable scanner 2500 can be a personal scanner of the user such that the store does not issue the portable scanner 2500 to the user when he or she enters the store to purchase articles of commerce 2504, but instead the user brings his or her personal scanner 2500 to the store to scan articles of commerce 2504 and then carries the scanner 2500 to another location, for example, home to input or transmit the information into a computer for authorizing transactions over the GCN 306. Similarly, the user of the portable scanner 2500 can make the product or article of commerce selections at any location, storing the MRC data within the scanner 2500 and bringing the scanner 2500 to another location to facilitate purchase of the selected articles of commerce. For example, the user could bring the stored MRC data into the store for purchase after making the selections for purchase at home by viewing the product information presented to him or her from a vendor website, and then perhaps printing out product information on a local printer and scanning an associated MRC data for storage in the portable scanner 2500. Alternatively, the user can receive flyers or product information through the U.S. Postal system to his or her home with the MRC data associated therewith and then scan the MRC data for storage in the scanner 2500, and then bring the scanner 2500 to another location which accommodates the disclosed architecture for transmission and pickup of the articles of commerce or merchandise.

In another embodiment similar to the above-noted embodiments, the user can utilize the scanner in a mode wherein the user scans a single bar code or MRC and

stores the decoded information therein. Immediately after scanning, the user can go to some type of kiosk for the purpose of updating his "grocery cart" for the purpose of accruing information. This kiosk can have a processing system such as a personal computer associated therewith that can wirelessly detect the information, as described hereinabove. Upon detection, the PC or processing device then emits some form of tone or visual indication to the user indicating that the transfer was complete. The display could even display the information about the product to the user, if the user so desired. However, once the user transmits the information by depressing the transmit button 2506, the commercial transaction is complete, i.e., the user has purchased the item. In this way, the user has the ability to form the functions of scan, transmit and buy, such that the completion of the commercial transaction is the result of an active operation on the part of the user of transmitting the scanned information to a receiving device.

Although the preferred embodiment has been described in detail, it should be understood that various changes, substitutions and alterations can be made therein without departing from the spirit and scope of the invention as defined by the appended claims.